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An Economic Analysis of Mandatory Leased Channel Access for Cable Television. With L.L. Johnson. The Rand Corporation, R-2989-MF, December 1982.

After Energy Price Decontrol: The Role of Government Conservation Programs. With L.L. Johnson. The Rand Corporation, N-1903-DOE, October 1982.

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On Measuring the Gain in Economic Welfare from Marginal Cost Pricing When a Related Market Is of Importance: The Case of Electricity and Natural Gas. With B.M. Mitchell. The Rand Corporation, P-5755, February 1977.



"A Simultaneous Equations Model of Television Station Revenue and Expenditure." Appendix F to R.E. Park, L.L. Johnson, and B. Fishman, *Projecting the Growth of Television Broadcasting: Implications for Spectrum Use*, The Rand Corporation, R-1841-FCC, February 1976.

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An Economic Evaluation of an Alternative Method of Funding Public Broadcasting. Broadcasting Institute of North America, 1973.

Evaluating the Returns to Regional Economic Development Programs. Institute for Defense Analyses, B-272, 1966.

Internal Prices as an Administrative Tool: An Application to the Military Air Transport Service. With M.J. Bailey, J.G. Cross, and W.P. Sewell. Institute for Defense Analyses, S-200, 1965.

## **Articles and Book Chapters**

"AM v. FM: The Battle of the Bands." Industrial and Corporate Change (1992).

"An Economic Analysis of Copyright Collectives." With S.N. Kirby and S.C. Salop. Virginia Law Review (1992).

"The Role of the ITU in Telecommunications Standardization: Pre-Eminence, Impotence, or Rubber Stamp?" With J. Farrell. *Telecommunications Policy* (1991). Reprinted as The Rand Corporation, RP-100, 1992.

"An Introduction to the Law and Economics of Intellectual Property." With L.J. Raskind. Journal of Economic Perspectives (1991).

"The European Telecommunications Standards Institute: A Preliminary Analysis." Telecommunications Policy (1990). Reprinted as The Rand Corporation, N-3320-NSF, 1991.

"Separate Satellite Systems and INTELSAT: An American View." Revue de Droit de l'Informatique et des Telecoms (1989).

"The Economics of Telecommunications Standards." With G. Saloner. In Changing the Rules: Technological Change, International Competition, and Regulation in Communications, edited by R.W. Crandall and K. Flamm. Brookings Institute, 1989.



"Private Copying, Appropriability, and Optimal Copying Royalties." With S.N. Kirby. *Journal of Law and Economics* (October 1989). An earlier version appeared as The Rand Corporation, R-3546-NSF, October 1987.

"Assessing the Effects of Bulk Power Rate Regulation: Results from a Market Experiment." With J.P. Acton. Applied Economics (May 1987). Reprinted in Competition in Electricity: New Markets and New Structures, edited by J. Plummer and S. Troopman, Public Utilities Reports and QED Research, 1990. An earlier and more extended version appeared as Regulation, Efficiency, and Competition in the Exchange of Electricity: First-Year Results from the FERC Bulk Power Market Experiment, The Rand Corporation, R-3301-DOE, October 1985.

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"Regulation of Broadcast Station Ownership: Evidence and Theory." With L.L. Johnson. In Video Media Competition: Regulation, Economics, and Technology, edited by E.M. Noam. Columbia University Press, 1985.

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"Market Size, VHF Allocations, and the Viability of Television Stations." With P.J. Hanley. Journal of Industrial Economics (September 1975).

"The Economics of the Network-Affiliate Relationship: Reply." With R. Soligo. American Economic Review (December 1975).

"The Economics of the Cable Television 'Consensus." Journal of Law and Economics (April 1974).

"Education and Productivity in United States Manufacturing: Some Cross-Section Evidence." Journal of Political Economy (May/June 1973).



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"Elasticities of Substitution and Returns to Scale in United States Manufacturing: Some Additional Evidence." Southern Economic Journal (October 1967).

"Cost Effectiveness Analysis for the 'War on Poverty." With A.E. Fechter and A.C. Fisher. In Cost-Effectiveness Analysis: New Approaches in Decision-Making, edited by T.A. Goldman. New York: Praeger, 1967.

"An Empirical Analysis of Commercial Bank Lending Behavior." Yale Economic Essays (Fall 1965).

### **CONGRESSIONAL TESTIMONY**

Witness, Subcommittee on Intellectual Property and Judicial Administration, Committee on the Judiciary, U.S. House of Representatives, 1991. Prepared statement and testimony appear in *Intellectual Property and International Issues*, 102nd Congress, 1st Session, forthcoming.

Witness, Subcommittee on Telecommunications and Finance, Committee on Energy and Commerce, U.S. House of Representatives, 1990. Prepared statement and testimony appear in Cable Television Regulation (Part 2), 101st Congress, 2nd Session.

Witness, Subcommittee on Telecommunications, Consumer Protection, and Finance, Committee on Energy and Commerce, U.S. House of Representatives, 1983. Prepared statement and testimony appear in *Options for Cable Legislation*, 98th Congress, 1st Session.

Witness, Subcommittee on Communications, Committee on Commerce, Science, and Transportation, U.S. Senate, 1982. Prepared statement and testimony appear in *Cable Television Regulation*, 97th Congress, 2nd Session.

Witness, Subcommittee on Telecommunications, Consumer Protection, and Finance, Committee on Energy and Commerce, U.S. House of Representatives, 1981. Prepared statement and testimony appear in Status of Competition and Deregulation in the Telecommunications Industry, 97th Congress, 1st Session.

Witness, Subcommittee on General Oversight and Minority Enterprise, Committee on Small Business, U.S. House of Representatives, 1980. Prepared statement and testimony appear in *Media Concentration (Part 1)*, 96th Congress, 2nd Session.



Witness, Subcommittee on Communications, Committee on Commerce, Science, and Transportation, U.S. Senate, 1977. Prepared statement and testimony appear in *Cable Television*, 95th Congress, 1st Session.

Witness, Subcommittee on Communications, Committee on Interstate and Foreign Commerce, U.S. House of Representatives, 1976. Prepared statement and testimony appear in *Cable Television Regulation Oversight - Part 1*, 94th Congress, 2nd Session.



### STEVEN R. BRENNER -- Senior Associate

Ph.D. Economics, Stanford University B.A. Economics, Wabash College

Mr. Steven R. Brenner is a Senior Associate in the Economic Litigation Program (Washington, D.C. office). Since joining CRA in 1988, Mr. Brenner has consulted primarily in the areas of telecommunications and broadcast policy, antitrust liability and damage analysis, and intellectual property rights.

#### PREVIOUS EXPERIENCE

Consultant to the OECD, Division on Competition and Consumer Policy, 8/90-9/92. Mr. Brenner served as a Consultant to the OECD in Paris while on leave from Charles River Associates. He was principle author of a report on competition policy issues in the broadcast industry drafted for the OECD Committee on Competition Law and Policy, and co-author of a report of the OECD Secretariat analyzing the treatment by competition policy in OECD countries of vertical restrictions in franchise agreements.

Vice President, Cornell, Pelcovits & Brenner Economists, Inc., 2/82 - 9/88. As a microeconomic consultant primarily in the fields of telecommunications, broadcasting, intellectual property rights, and antitrust economics, Mr. Brenner performed the following work:

- Developed and presented expert testimony before state public utility commissions on a variety of telecommunications policy and empirical issues;
- Prepared antitrust damage studies and analyzed antitrust liability issues;
- Analyzed intellectual property rights implications of home audio and video taping;
- Designed and developed tariffs for cellular telephone and mobile satellite service applications before the FCC.

Senior Economist, Owen, Cornell, Greenhalgh & Myslinski Economists Inc., 9/81 - 2/82. As a microeconomic consultant in telecommunications, broadcasting, and antitrust economics, Mr. Brenner worked on various projects, including one analyzing the economic impact of broadcasting regulations on the video industry and on its use of new technologies.

Senior Economist, Office of Plans and Policy, Federal Communications Commission, 7/79 - 9/81. As the economist on the UHF Comparability Task Force, Mr. Brenner analyzed the economics of UHF broadcasting, wrote parts of Task Force reports and separate reports, designed two large surveys, and carried out econometric analysis of data. Other responsibilities



included evaluating broadcast and technical standards policy proposals, analyzing radio frequency interference policy and making oral presentations to the Commission at formal agenda meetings on UHF comparability and on technical standards for stereophonic AM radio.

Assistant Professor of Economics, Grinnell College, 8/73 - 7/79. Mr. Brenner taught courses in industrial organization, statistics, microeconomic analysis, the economics of regulation, international economics, and U.S. economic history. He was selected as instructor for the Grinnell-in-London Program in 1978.

Visiting Instructor of Economics, University of Iowa, 1/77 - 5/77. Taught graduate and undergraduate courses in U.S. economic history.

Lecturer in Economics, Stanford University, 1/72 - 5/72. Taught a course in microeconomic theory.

Instructor in Economics, California State College at Hayward, 9/68 - 12/71. Taught courses in principles of economics.

# **PUBLICATIONS**

Co-author, "Testing for Cross-Subsidies By Regulated Telecommunications Firms," Proceedings of the Institute of Public Utilities Twentieth Annual Conference, forthcoming.

Co-author, "Access Charge Theory and Implementation: A Slip Twixt Cup and Lip," Proceedings of the Institute of Public Utilities Fourteenth Annual Conference, 1984.

Co-author, "Toward Competition in Phone Service: A Legacy of Regulatory Failure," by Nina W. Cornell, Michael D. Pelcovits, and Steven R. Brenner, Regulation, July/August 1983.

Co-author, "The Effect of Viewer Behavior on Reception and Viewing of UHF Television," *Proceedings of the IEEE*, Volume 70, Number 11, November 1982.

Co-author, UHF Viewing and Television Channel Selector Type, Staff Report, UHF Comparability Task Force, Office of Plans and Policy, Federal Communications Commission, February 1982.

Co-author, Comparability for UHF Television: A Final Report, Staff Report, UHF Comparability Task Force, Office of Plans and Policy, Federal Communications Commission, September 1980.



Co-author, Comparability for UHF Television: A Preliminary Report, Staff Report, UHF Comparability Task Force, Office of Plans and Policy, Federal Communications Commission, September 1979.

### **UNPUBLISHED PAPERS**

The Economic Choices of Broadcasting and Viewers, Staff Report, UHF Comparability Task Force, Office of Plans and Policy, Federal Communications Commission, placed in General Docket 78-391, June 1982.

"Protectionist Interests and the Trade Agreements Program," presented at the Eastern Economics Association Meeting, Washington, D.C., May 1978.

"Economic Interests and the Trade Agreements Program," Ph.D. dissertation, Stanford University, 1977.

### **TESTIMONY - REGULATORY COMMISSIONS**

- Public Service Commission of Alabama
  - In the matter of the Application of GTE Sprint Communications Corporation for a Certificate of Public Convenience and Necessity to Offer Intercity Telecommunications Services to the Public in the state of Alabama, Docket No. 18985, 3/1/84.
- Arizona Corporation Commission
  - In the Matter of the Application of Satellite Business Systems for Authority to Provide Intrastate Telecommunications Services in Arizona, Docket No. U-2457-85-062, 6/14/85.
- Public Utilities Commission of the State of Colorado
  - Application No. 36337, Application No. 36360, Application No. 36456, Case No. 6386, 11/09/84.
- Florida Public Service Commission
  - In Re: Intrastate Telephone Access Charges for Toll Use of Local Exchange Services, Docket No. 820537-TP, (Phase II) 10/1/84.



- In Re: Intrastate Telephone Access Charges for Toll Use of Local Exchange Services, Docket No. 820537-TP, 6/6/84.
- In Re: Application of AT&T Communications of the Southern States, Inc. for a certificate of public convenience and necessity/Motion for Waiver of Tariff Filing Requirements, Docket No. 830489-TI, 9/4/86.

### • Illinois Commerce Commission

- Illinois Commerce Commission On its Own Motion, Investigation concerning the appropriate methodology for the calculation of intrastate access charges for all Illinois telephone utilities, Docket No. 83-0142, 11/29/84.

### • Public Service Commission of Indiana

In the Matter of the Petition of AT&T Communications of Indiana, Inc. for Commission Declination to Exercise Jurisdiction over Telephone Companies Providing Intrastate InterLATA Facilities-Based Telecommunications Services, Cause No. 37911, In the Matter of the Petition of GTE Sprint Communications Corporation for an Investigation and Determination of the Form of Regulation Applicable to Telephone Companies Providing Competitive Intrastate, Intercity Telecommunications Services, but not Local Exchange Services, within Indiana, Cause No. 37557, Petition of MCI Telecommunications Corporation for an Investigation by the Public Service Commission of the State of Indiana into the Type and Scope of Regulation Which Should Be Applied to Nondominant Carriers Providing Intrastate Interexchange Telecommunications Services, Cause No. 37559, 5/5/86.

# • State of Iowa Department of Commerce - Utilities Division

In Re: Northwestern Bell Telephone Company. Docket No. RPU-88-9, 1/10/89-1/11/89.

## • Public Utilities Commission, State of Kansas

In the Matter of a General Investigation into the Rates Tariffs, Policies and Practices of Public Telephone Utilities Relating to Customer: Premises Equipment. (Regulation of Interexchange Carriers and IntraLATA Competition), Docket No. 127,140-U (Phase IV), 10/16/84.

### • Louisiana Public Service Commission



- Docket No. U-15955 in conjunction with Docket No. U-15995, Docket No. U-15457, Docket No. U-16012, 6/19/85.
- Department of Public Utilities, Commonwealth of Massachusetts
  - DPU 1655/1633, 1/6/84.
  - DPU 89-78 New England Telephone and Telegraph Company Toll Calling Plans, testimony filed June 1988.
- Michigan Public Service Commission
  - In the Matter of the Application of AT&T Communications of Michigan, Inc., for Authority to Amend its Rate Schedules and Tariffs and Miscellaneous Rules and Regulations Governing its Telephone Communications Service, Case No. U-8039, 3/25/85.
- Minnesota Public Service Commission
  - In Re: A Summary Investigation into Intrastate Switched Access Charges Proposed by Northwestern Bell Telephone Company for its Minnesota Customers, Docket No. P-421/CI-85-352.
- Mississippi Public Service Commission
  - In Re: Petition of MCI Telecommunications Corporation for a Certificate of Public Convenience and Necessity to Render Intrastate Telecommunication Service within Mississippi and for Approval of Proposed Tariff, Docket No. U4633, 3/21/85.
- Nevada Public Service Commission
  - In the Matter of the Petition of AT&T Communications of Nevada, Inc., for Adoption of Rules and Regulations Governing Competitive Telecommunications Services in the State of Nevada, Docket No. 84-758, 12/20/84.
  - In Docket No. 84-443 on behalf of MCI Telecommunications Corporation, and in Docket No. 84-605 on behalf of GTE Sprint Communications Corporation; testimony filed 8/1/84.



## Oklahoma Corporation Commission

- In the Matter of the Application of GTE Sprint Communications Corporation for a Certificate of Public Convenience and Necessity to offer intercity telecommunications services to the public in the State of Oklahoma, Cause No. 28780, 5/15/84.

### • Tennessee Public Service Commission

- In Re: Application for Certificate of Public Convenience and Necessity of GTE Sprint Communications Corporation, Docket No. U-84-7326, 1/17/85.
- In the Matter of: Tariff filing by AT&T Communications to establish rates and charges for MEGACOM and MEGACOM 800 services; Tariff filing by US Sprint to establish rates and charges for ULTRAWATS; Tariff filing by MCI Telecommunications for PRISM I and PRISM II; Tariff filing by US Sprint to establish rates and charges for DIRECT 800 and ULTRA 800 services; Docket Nos. U-87-7492, U-87-7512, U-87-7513, U-87-7514, U-87-7515, 9/3/87.

## • Public Utility Commission of Texas

- Application of AT&T Communications of the Southwest, Inc. to remove the tariff restriction on its Reach Out Texas offering, Docket No. 6761, 1/19/87.
- Petition of the General Counsel for Initiation of an Evidentiary Proceeding to Establish Telecommunications Submarkets, Docket No. 6264, 9/27/86 and 9/30/85.
- Petition of Southwestern Bell Company for Approval of Tariff to Allow Customers to Install and Maintain Inside Wire, Docket No. 5141, filed 10/24/83.

## • Public Service Commission of Utah

In the Matter of the Investigation of Access Charges for Intrastate IntraLATA and InterLATA Telephone Services, Case No. 83-999-11, 11/20/84.

### • State of Vermont Public Service Board

- In Re: Investigation of telephone toll settlements and investigation into telephone intrastate tariffs for access to the local exchange network and petition of Burlington Telephone Company requesting the Board to find that the restriction of resale of Wide Area Telephone Service (WATS) in New England Telephone



Company Tariff PSB VT. - 20 Section 10.2.1.A is invalid, Case Nos. 5092, 5114, 4946, 4/2/87.

- Public Service Commission of Wisconsin
  - Investigation of the Proposed InterLATA Access Charge Tariff of Wisconsin Bell, Inc., The Intrastate Capacity Plan and Other Related InterLATA Compensation Matters. Case No. 6720-TR-100, 2/26/87.

### **TESTIMONY - COURT CASES**

Williams Telecommunications Company vs. Larry C. Gragg and Phyllis J. Gragg;
 St. Lawrence Catholic Center et al. vs. Williams Pipe Line Company et al., in the District Court of Shawnee County, Kansas, Division Six, Case Nos. 86-CV-1130, 86-CV-1205 (Consolidated), 12/17/86.

## **TESTIMONY - CONGRESSIONAL**

### Before the:

• House Judiciary Committee, Subcommittee on Courts, Civil Liberties, and the Administration of Justice, 10/6/83, (Repeal of the First Sale Doctrine).



### JOHN R. WOODBURY — Senior Associate

Ph.D. Economics, Washington University (St. Louis)
M.A. Economics, Washington University (St. Louis)

B.A. Economics, College of the Holy Cross, summa cum laude

John R. Woodbury is a Senior Associate in CRA's Economic Litigation Program. His principal fields of expertise are industrial organization, regulation, antitrust, law, and economics.

#### PRIOR PROFESSIONAL EXPERIENCE

Microeconomic Consulting and Research Associates, Inc.
(formerly Competitive Analysis Group, ICF Consulting Associates)

Principal, 1989–1992. Responsible for providing antitrust and regulatory advice to clients.

### Federal Trade Commission (1985–1989)

Associate Director for Special Projects, Office of the Bureau Director, Bureau of Economics. Responsible for: initiating, conducting, and reviewing economic studies on Commission and other regulatory policies (including telecommunications); drafting speeches for the Chairman; and reviewing Bureau participation in FTC cases.

Assistant Director for Rulemaking, Division of Policy and Evaluation, Bureau of Consumer Protection. Responsible for managing the Commission's Rulemaking Agenda, and drafting recommendations to the Commission from the Bureau Director. Rules reviewed include Holder-in-Due-Course, Vocational Schools, Cooling-Off, and Funeral Rules.

Deputy Assistant Director, Regulatory Analysis, Bureau of Economics. Responsible for conducting or supervising studies or filings before regulatory agencies, including the Federal Communications Commission, the International Trade Commission, and the National Highway Traffic Safety Administration.

#### National Cable Television Association

Vice President, Department of Research and Policy Analysis, 1983–1985. Responsible for conduct or supervision of studies related to cable television, including consumer costs of the franchising process, deregulation of cable prices, effects of copyright fees on consumers, and the extent of competition with cable TV.



### **Federal Trade Commission**

Senior Economist, Regulatory Analysis Division, Bureau of Economics, 1982–1983. Responsible for broadcasting and telecommunications.

### Federal Communications Commission (1979–1982)

Chief, Economics Division, Common Carrier Bureau. Senior economic advisor to Bureau and Commission on common carrier policy. Directed 25 subordinates in policy analysis.

*Industry Economist*, Network Inquiry Special Staff. Responsible for the analysis of the program supply industry, and the competitive impact of new broadcast technology.

### Civil Aeronautics Board

Brookings Economic Policy Fellow assigned to Office of Economic Analysis, 1978–1979. Responsible for the development of merger policy, international aviation policy, and service to small communities. Position: Assistant Chief, Policy Analysis Division.

### State University of New York at Albany

Assistant Professor of Economics, 1977-1978

### Federal Reserve Bank of New York at Albany

Economist, International Research Department, 1975-1977. Responsible for assessing bank-reported capital flows and exchange-rate movements.

### Southern Illinois University

Lecturer, 1974-1975.

#### **EXPERT WITNESS ACTIVITIES**

Expert Witness before the Copyright Royalty Tribunal, Rebuttal Testimony on the Value of Distant Signal Sports Programming. Prepared on behalf of the Motion Picture Association of America, December 1991.

Affidavit before the Department of Justice, "Economic Implications of the Pac Tel/Chicago Waiver Request." Prepared on behalf of the National Cable Television Association, January 1990.



Expert Witness preparation in five antitrust investigations, 1988-1992, on behalf of the FTC.

Expert Witness, <u>FTC</u> vs. <u>Elders Grain</u>, Preliminary Injunction Proceeding, Sixth District Court. Testimony prepared on behalf of the FTC, June 1988.

Expert Witness before the International Trade Commission and Department of Commerce, Imports of Japanese Semiconductors. Testimony prepared on behalf of FTC, 1986.

Expert Witness, Texas International/National/Pan American Acquisition Case and Continental/Western Acquisition Case. Testimony prepared on behalf of the Civil Aeronautics Board, 1978–1979.

### OTHER SELECTED CONSULTING ACTIVITIES

Evaluation of the prospects for Direct Broadcast Satellites on behalf of a potential investor, 1992.

Assisted in the preparation of testimony on the value of distant signal programming to earth station owners on behalf of the Motion Picture Association of America, 1992.

Prepared estimates of the supply elasticity of crude oil production and a paper (with F.R. Warren-Boulton and K. Baseman) on the alternatives to traditional pipeline regulation for a pipeline client, 1991–1992.

Prepared analyses of liability and damage estimates on behalf of NEC in a bid-rigging allegation and presented those analyses to Justice Department officials (with F.R. Warren-Boulton), 1991.

Prepared a report, "Economic Analysis and Policy Implications of the Financial Interest and Syndication Rule" (with F.R. Warren-Boulton) on behalf of the Motion Picture Association of America, 1990.

Submitted a report, "The Effect of Rate Deregulation on Cable Subscribers," to the Federal Communications Commission on behalf of the National Cable Television Association, 1990.

Submitted an analysis of sham litigation allegations to the Justice Department on behalf of a software client, 1989.



### **PUBLICATIONS**

"Assessing Competition and Deregulation in Telecommunications: Some Observations on Methodology." In After the Breakup: Assessing the New Post-AT&T Divestiture Era, edited by Barry Cole. New York: Columbia University Press, 1991.

"Deterrence and Justice." With J. Bilmes. Research in Law and Economics (1991).

"The First Amendment, Cable MTV, and the Must-Carry Rule: Towards a Cost-Benefit Analysis." Proceedings of the Airlie House Conference on Telecommunications, 1987.

"Video Competition and Consumer Welfare." Proceedings of the Arden House Conference on Video Competition, edited by Eli Noam. New York: Columbia University Press, 1986.

Misregulating Television. With S. Besen, R. Metzger, and T. Krattenmaker. Chicago: University of Chicago Press, 1984.

"Regulation, Deregulation, and Antitrust in Telecommunications." With S. Besen. Antitrust Bulletin (Spring 1983).

"Determinants of Network Television Program Prices: Implicit Contracts, Regulation, and Bargaining Power." With S. Besen and G. Fournier. *Bell Journal of Economics* (Autumn 1983).

"Price Competition, Advertising, and Market Structure." With A. Arterburn. Southern Economic Journal (January 1981).

"Exchange Rate Stability and Monetary Policy." With B. Putnam. Albany Discussion Paper #95 in Review of Economics and Business Research (Winter 1980).

"Capital Market Integration Under Fixed and Floating Exchange Rates: An Empirical Analysis." Journal of Money, Credit, and Banking (May 1980).

#### OTHER COMPLETED RESEARCH

"Do Government-Imposed Ownership Restrictions Inhibit Efficiency?" Working Paper of the Bureau of Economics, No. 169, 1988.

"Empirical Evidence on Efficiencies in the Common Ownership of Broadcast Stations." With K. Anderson. Comments on FCC Proceeding, 1987.



"Over-the-Air Television and Cable Prices: An Econometric Inquiry." With M. Bykowsky. Served as basis of FCC decision deregulating cable prices, 1985.

"The Effect of Rate Regulation and Franchise Delay on Program Availability." With D. Koran. Comments on FCC Proceeding, 1985.

"Pricing Flexibility and Consumer Welfare: The Deregulation of Basic Cable Rates." NCTA White Paper, 1984.

"Economic Assessment of the Financial Interest and Syndication Rules." With K. Anderson. Comments on FCC Proceeding, 1983.

"Private Sales of Satellite Transponders." Comments on FCC Proceeding, 1982.

An Analysis of Television Program Production, Acquisition, and Distribution. With R. Metzger. Network Inquiry Special Staff, Preliminary Report, Federal Communications Commission, June 1990.

"Production Abroad: Theoretical Considerations and Empirical Analysis." Mimeo, 1978.

"Scale Economies in the Airline Industry: A Survey." Mimeo, 1978.

### PRESENTED PAPERS

"Straws in the Bottleneck: Regulatory Alternatives for CAPs." With Frederick R. Warren-Boulton and Glenn A. Woroch. International Telecommunications Society, June 1992.

"The Effects of Rate Deregulation on Cable Subscribers." With K. Baseman. Policy Approaches to the Deregulation of Network Industries: An American Enterprise Institute Conference, October 1990.

"Economic Analysis and Policy Implications of the Financial Interest and Syndication Rule." Telecommunications Policy Research Conference, Airlie House, October 1990.

"The Design and Evaluation of Competitive Rules Joint Ventures for Mergers and Natural Monopolies." With F.R. Warren-Boulton. American Economic Association Meetings, December 1989.

"Do Media Ownership Restrictions Reduce Economic Efficiency?" Telecommunications Policy Research Conference, Airlie House, November 1989.



"Regulation versus Antitrust." Annenberg Conference: The Divestiture Five Years Later, March 1989.

"The Conflict Between Spectrum Efficiency and Economic Efficiency." With R. Rogers. Telecommunications Policy Research Conference, Airlie House, November 1988.

"Regulating Cable Television." Telecommunications Policy Research Conference, Airlie House, September 1987.

"An Empirical Analysis of Television Program Prices." With S. Besen and G. Fournier. Meetings of the Southern Economic Association, November 1981.

"Flexible Exchange Rates and Market Integration." With B. White. Federal Reserve System Conference on Financial Market Research, June 1979.

"Price Competition, Advertising, Market Structure." With A. Arterburn. Meetings of the Southern Economic Association, November 1978.

"The Effects of Exchange Rate Systems on International Capital Market Integration." With B. White. Federal Reserve System Conference on International Research, November 1977.

#### OTHER PROFESSIONAL ACTIVITIES

Chair, "Competition between Cable Television and Telephone Companies," Telecommunications Policy Research Conference, September 1991.

Discussant, "Competition and Ownership in the Media," Telecommunication Policy Research Conference, September 1991.

Chair, "Spectrum Management Session," Telecommunications Policy Research Conference, Airlie House, September 1988.

Book Review, *Productivity in the United States* by John Kendrick and Elliot Grossman, *Southern Economic Journal*, April 1981.

Discussant, "Deregulation of Telecommunications," Meetings of the Western Economic Association, July 1981.

Referee, Southern Economic Journal, Rand Journal of Economics, Harvard University Press.



## **AWARDS**

Award for Excellence in Economics (FTC), 1988 Competition Advocacy Award (FTC), 1987 Brookings Economic Policy Fellow, 1978–1979 SUNY Faculty Research Grant, 1978 NSF Traineeship, 1973–1974 Finalist, Woodrow Wilson Fellowship Competition, 1971

